Hydrology and Earth System Sciences Discussions

Interactive comment on "Interpolation of groundwater quality parameters with some values below the detection limit" *by* A. Bárdossy

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Review Comment

The paper presents two copula models-the Gaussian and non-Gaussian v-copula-to interpolate variables with data below a detection limit. The models were applied to integrate the arsenic, chloride and deethylatrazin data measured at more than 2000 locations in the South-West German. The result of the developed models outperforms ordinary and indicator Kriging methods. Although the paper is of interest, the contents are difficult to follow. The description or notation used in the Tables and Figures were either incomplete or missing. The order of the Figures present in the text jump back and forth. The essence of the copula model was not properly described. Since the theory

of the method has been published elsewhere (Bardossy, 2006; Bardossy and Li, 2008) it will be nice if the authors provide a more illustrative essay for the comparison of the current methods and other types of Kriging approaches. Specific comments are as follows. 1. P5255 L19, Is there particular parametric form to be assumed. 2. In the "Interpolation" section the author used the four corner square model for interpolation. How about the interpolation in a three dimensional domain? 3. P5278 L16, How about the result of the values set to the half of the detection limit in Fig.10. 4. Move the description of Figs. 8 and 9 in front of Fig. 10. 5. P5279, What is LEPS? Any particular reason to leave out the 1% of the measured values? 6. Missing the notation for Y axis in Figs. 1, 3 and concentration units in Figs. 4, 10 and 11. 7. In-completed caption in Figs 4, 10 and 11.